

AHSAN CHOUDHURI, PH.D.
PROFESSOR AND CHAIR, DEPARTMENT OF MECHANICAL ENGINEERING
MR. AND MRS. MACINTOSH MURCHISON CHAIR II IN ENGINEERING
DIRECTOR, NASA MIRO CENTER FOR SPACE EXPLORATION & TECHNOLOGY RESEARCH

Ahsan Choudhuri is Professor and Chair of the Mechanical Engineering Department and Founding Director of the NASA MIRO Center for Space Exploration and Technology Research (cSETR) at The University of Texas at El Paso (UTEP). He also holds the endowed Mr. and Mrs. MacIntosh Murchison Chair II in Engineering. He leads a department of more than 1100 graduate and undergraduate students. Under the direction of Dr. Choudhuri, the cSETR performs frontier research in aerospace and energy engineering while training underrepresented minorities in the fields of science, technology, engineering and mathematics (STEM). cSETR supports an average of 70 students.



During his 17 years at UTEP he has led the transformation of the Mechanical Engineering Department to a nationally preeminent education and research program. In his leadership role, he also formed strategic collaborations and partnerships with NASA, DOE, DOD, aerospace and defense industries, and other universities. This is reflected in the more than \$29 million (PI and Co-PI) in external grants, contracts, and capital funding generated by his effort. Dr. Choudhuri has mentored 7 Research Assistant Professors, been the research supervisor of 18 PhD and 66 MS graduates, and co-authored more than 140 technical publications. Many of these students have been recruited to the job market obtaining positions within academia, federal agencies, and aerospace and defense industries.

Dr. Choudhuri has received numerous awards and recognitions including recognition for Faculty Award for Research Innovation from NASA and an Outstanding Leadership Award from UTEP.

Dr. Choudhuri received a B.S. in Engineering from Khulna University of Engineering and Technology Department of Mechanical Engineering and an M.S. and Ph.D. from the University of Oklahoma School of Aerospace and Mechanical Engineering.

- cSETR's Technical and Administrative Managers are Women.
- Significant infrastructure and capacity building 28,000 sq-feet of shared laboratories for advanced aerospace, defense, and energy research

Advancement

- Secured \$2.1 million gift from Corporations and Alumni.

K-12 Programs

- Developed UTEP NASA MAA Southwest (NASA MUREP Aerospace Academy for the Southwest), a NASA funded K-12 program to inspire, engage and educate students, teachers, parents and communities. Since 2011 the program has successfully engaged and prepared more than 5600 K-12 students and 400 in-service teachers.
- Designed and Developed STARPath (Space Technology Augmented Retention Path) Program with four local schools (Bowie High School, Fabens High School, Burges High School and Riverside High School).

Undergraduate Programs

- Designed and implemented a new design-spine (design, make, and test) and project based mechanical engineering undergraduate curriculum.
- Implemented an extensive project and practice-based learning environment.

Graduate Programs

- Led the development of Mechanical Engineering PhD Program.
- Currently leading the development of a Master's program in Aerospace and Defense Engineering and a graduate certificate in 3D Engineering and Additive Manufacturing. Engaged multiple industry partners to develop these programs.
- Developed an Energy Science and Engineering PhD track within the ESE PhD program to facilitate the development of Mechanical Engineering PhD program.

Pre-Professional and Global Experiences

- Developed a highly successful graduate and undergraduate internship program with NASA and Lockheed Martin Aeronautics.
- Developed an international academic collaboration program in Space Engineering with Kyushu Institute of Technology.
- Recently received a NSF IRES grant to develop a US-Canada Collaborative Research on Combustion with McGill University.

Regional Economic Development

- Currently leading the development of UTEP Technology Research and Innovation Acceleration Park (tRIAC) in Fabens, a world-class facility to accelerate innovation and support transformational aerospace and advanced manufacturing technology research.

Curriculum Vitae

AHSAN CHOUDHURI, PH.D.

EDUCATION

- Ph.D. Mechanical Engineering** *December 2000*
The University of Oklahoma
Dissertation: *An Experimental and Numerical Investigation on Hydrogen-Hydrocarbon Composite Fuel Combustion*
Advisor: Professor S. R. Gollahalli
- M.S. Mechanical Engineering** *May 1997*
The University of Oklahoma
Thesis Title: *Experimental Studies on Hybrid Fuel Combustion*
Advisor: Professor S. R. Gollahalli
- B.S. Mechanical Engineering** *January 1993 (1st Class with Merit Position)*
Khulna University of Engineering and Technology, Bangladesh

PROFESSIONAL EXPERIANCES

Administrative

- Chairman** *May 2010- Present*
Department of Mechanical Engineering
The University of Texas at El Paso
- Founding Director** *October 2009– Present*
NASA MIRO Center for Space Exploration Technology Research (cSETR)
The University of Texas at El Paso
- Co-Director** *September 2010– December 2013/May 2014–April 2016*
Interdisciplinary Environmental Science and Engineering PhD Program
The University of Texas at El Paso

Academic

- Mr. and Mrs. MacIntosh Murchison Chair II in Engineering,
Professor, Associate Professor,
and Assistant Professor** *February 2001-Present*
Department of Mechanical Engineering
The University of Texas at El Paso
- Affiliated Graduate Faculty** *September 2009–December 2012*
Department of Mechanical Engineering
The University of Maryland at College Park

Affiliated Graduate Faculty *October 2005- December 2010*
School of Aerospace and Mechanical Engineering
The University of Oklahoma at Norman

Lecturer *June 1993 -December 1995 /May 1997-August 1998*
Department of Mechanical Engineering,
Khulna University of Engineering and Technology, Bangladesh

Research Assistant *January 1996-May 1997 /August 1998-December 2000*
School of Aerospace and Mechanical Engineering
The University of Oklahoma

AWARDS AND HONORS

Millionaire Research Award, The University of Texas at El Paso, 2017
Best Propulsion Education Paper, American Society of Engineering Education and American Institute of Aeronautics and Astronautics, 2017
Best Paper Award, American Institute of Aeronautics and Astronautics, 2016
Millionaire Research Award, The University of Texas at El Paso, 2016
Millionaire Research Award, The University of Texas at El Paso, 2015
Best Paper Award (Graduate Category), International Testing and Evaluation Association, 2012
Best Paper Award (Undergraduate Category), International Testing and Evaluation Association, 2012
Faculty Award for Research Innovation, NASA, 2011
Best Paper Award (Undergraduate Category), International Testing and Evaluation Association, 2011
Outstanding Leadership Award, University of Texas, El Paso, 2010
Outstanding Performance Award, The University of Texas at El Paso, 2010
Best Paper Award, American Institute of Aeronautics and Astronautics, 2004
Best Paper Award (Graduate Category), International Testing and Evaluation Association, 2005
Faculty Advisor, Winning Design (2nd Place), NASA Titan Aerial Vehicle Design Project, 2003
NASA-Cal Tech Summer School for Planetary Scientists, 2001
Outstanding Research Assistant, The University of Oklahoma, 2000

PUBLICATIONS

- T. Report reviewed by funding agencies
- W. Full paper reviewed by one or more anonymous referees
- X. Full paper reviewed by editor or by conference committee, etc.
- Y. Abstract of paper reviewed
- Z. Not reviewed

1. Hossain, A, de la Torre, M, Norman, L., Acosta, A., and Choudhuri, A. *Design of an Optically Accessible Turbulent Combustion System*, 2017, Journal of Mechanical Engineering Science, *accepted for publication*. (W)
2. Chowdhury, ASM., Bugarin, L., Badhan, A., Choudhuri, A., Love, N., *Thermodynamic Analysis Of A Directly Heated Oxyfuel Supercritical Power System*, 2016, Applied Energy, Vol. 179, No. 1, pp. 261-271.(W)
3. Adrian, T., Abraham, T., Galvan, M., Melcher, J., Bruggemann, and Choudhuri, A., *Experimental Investigation of Liquid Methane Convection and Boiling in Rocket Engine Cooling Channel*, 2016, Journal of Thermophysics and Heat Transfer, Vol. 30, No. 4, pp. 937-945. (W)
4. Mireles, J., Hossain, M., Gonzalez, J., Martimez, R., Shuvo, M., Choudhuri, A., Lin, Y., Wicker, R., *Fabrication of Smart Parts using Powder Fusion Additive Manufacturing Technology*, 2016, Additive Manufacturing, Vol. 10, pp.58-66.(W)
5. de la Torre, M., Chowdhury, A., Love, N., and Choudhuri, A., *Radiative Heat Release from Premixed Oxy-Syngas and Oxy-Methane flames*, 2016, Fuel, Vol. 166, pp. 567-573. (W)
6. Yonemoto, K., Yamasaki, H., Ichige, M., Ura, Y., Gossamsetti, G., Ohki, T., Shirakata, K., Choudhuri, A., Ishimoto, S., Mugitani, T., Asakawa, H., and Nanri, H., *Winged Test Rocket with Fully Autonomous Guidance and Control for Realizing Reusable Suborbital Vehicle*, 2016, International Journal of Mechanical and Mechatronics Engineering Vol:3, No. 1, pp. 96-107. (W)
7. Karim, H., Delfin, D., Shuvo, M., Chavez. L., Garcia, C., Barton, H., Gaytan., S., Cadena, M., Rumpf, R., Wicker, R., Lin, Y., and Choudhuri., A., *Concept and Model of A Metamaterial Based Passive Wireless Temperature Sensor for Harsh Environment Applications*, 2015, IEEE Sensors Journal, Vol. 15, N0. 3, pp. 1445-1452. (W)
8. Mena, J., Ingle, M., Sirshat, V., and Choudhuri, A., *An Investigation of a Cavitating Venturi Flow Control Feature in a Cryogenic Propellant Delivery System Flow Measurement and Instrumentation*, 2014, Flow Measurement and Instrumentation, Vol. 41, pp. 97-103. (W)
9. Trejo, A., Garcia, C., and Choudhuri, A. *Experimental Investigation of Transient Forced Convection of Liquid Methane in a Channel at High Heat Flux Conditions*, 2014, Experimental Heat Transfer, Vol. 4, pp. 8224-8229. (W)
10. Sarker, S., M., Nunez, J., Carlos, V., Sarzina, H., Norman, L., and Choudhuri, A. *Design of an Optically Accessible High Pressure Combustor*, 2013, Journal of Mechanical Engineering Science, Vol. 229, No. 3, pp. 505-517. (W)
11. Noor-A-Alam, Gullapalli, S., Rubio, E., Ramana, C. V., Choudhuri, A., *Enhanced Stability of Hafnia Based Coatings in Hot Gas Environment*, 2014, RSC Advances. Vol. 4, pp. 8224-8229.(W)
12. Acosta, A., Flores, J., and Choudhuri, A. *Torsional Thrust Balance Measurement System Development for Testing Reaction Control Thrusters*, 2013, Measurement, Vol. 26, No. 9, pp. 3414-3428. (W)

13. Noor-A-Alam, M., Choudhuri, A and Ramana, C. V. *Structure and Thermal Conductivity of Nanostructured Hafnia-Based Thermal Barrier Coating Grown on SS-403*, 2013, J. Nanotechnol. Eng. Med., 4(1), 011007 (Jun 27, 2013) (5 pages) doi:10.1115/1.4024046. (W)
14. Dam, B. K. , Love, N. D. , and Choudhuri, A. R., *Flame Stability of Methane and Syngas Oxy-fuel Steam Flames*, 2012, Energy Fuels, Vol. 27, No. 1, pp. 523–529. (W)
15. Roy, C.K., Noor-A-Alam, M., Choudhuri, A.R., and Ramana, C.V., *Synthesis and Microstructure of Gd₂O₃-doped HfO₂ Ceramics*, 2012, Ceramics International, Vol. 38, No. 3, pp. 1801–1806. (W).
16. Dam, B., Corona, G., Hayder. M., Choudhuri, A., *Effects of Syngas Composition on Combustion Induced Vortex Breakdown (CIVB) Flashback in a Swirl Stabilized Combustor*, 2011, Fuel, Vol. 90, No. 2011, pp. 3274-3284. (W)
17. Noor-A-Alam, M., A.R. Choudhuri, and C.V. Ramana, *Effect of Composition on the Growth and Microstructure of Hafnia–Zirconia Based Coatings*, 2011, Surface & Coatings Technology, Vol. 206, No. 7, pp. 168-1633(W)
18. Ingle, M., Flores, J., Robinson, N., and Choudhuri, A., *Development of a Torsional Thrust Balance for the Performance Evaluation of 5-N Class Thrusters*, 2011, ITEA Journal 2011, Vol. 32, pp. 159–166. (W) (ITEA Best Paper)
19. Dam, B., Love, N., and Choudhuri, A., *Flashback Propensity of Syngas Fuels*, 2010, Fuel, Vol 90. No.2, pp.618-625 (W)
20. Dam, B., Ardha, V., and Choudhuri, A., *Laminar Flame Velocity of Syngas Fuels*, 2010, ASME Journal of Energy Resources Technology, doi:10.1115/1.4002762, Vol. 32, No. 4. 044501. (W)
21. Manciu, F., Camacho, J., and Choudhuri, A., *Flame Synthesis of Multi-walled Carbon Nanotubes Using CH₄-H₂ Fuel Blends*, 2008, Fullerenes Nanotubes and Carbon Nanostructures, Vol. 16, pp. 231-246. (W)
22. Choudhuri A., Subramanya, M, and Gollahalli, S. R., *Flame Extinction Limits H₂-CO Fuel Blends*, 2008, Journal of Engineering for Gas Turbine and Power Vol. 130, pp. 031501-1-8 . (W)
23. Olvera, H., Choudhuri, A., and Li. W., *Effects of Plume Buoyancy and Momentum on the Near-Wake Flow Structure and Dispersion Behind and Idealized Building*, 2007, Journal of Wind Engineering and Industrial Aerodynamics, Vol. 29, pp. 209-228.(W)
24. Choudhuri A. and Camacho, J. *Effects of Fuel Compositions on the Structure and Yield of Flame Synthesized Carbon Nanotubes*, 2007 Fullerenes Nanotubes and Carbon Nanostructures, Vol. 15, Number 2, pp 99-112. (W)
25. Olvera, H. and Choudhuri, A. *Numerical Simulation of Hydrogen Dispersion In the Vicinity of a Cubical Building in Stable Stratified Atmospheres*, 2006 International Journal of Hydrogen Energy, Vol. 31, pp. 2356-2369. (W)
26. Choudhuri, A. R., Camacho, J. and Chessa, J., *Flame Synthesis of Coiled Carbon Nanotubes*, 2006 Fullerenes Nanotubes and Carbon Nanostructures, Vol 14., Number 1, pp. 93-100. (W)
27. Camacho, J. and Choudhuri A, R. *Shapes of Elliptic Methane Laminar Jet Flames*, 2006 Journal of Engineering for Gas Turbine and Power, Vol. 28, 1-7. (W)

28. Choudhuri A. R. and Gollahalli, S. R., *Intermediate Radical Concentrations in Hydrogen-Natural Gas Blended Fuel Jet Flames*, 2004, International Journal of Hydrogen Energy, Vol. 29, 1293-1302.(W)
29. Murr, L. E., Bang, and Choudhuri, A. R. *Carbon Nanotubes and Nanocrystals in Methane Combustion and the Environmental Implications*, 2004, Journal of Materials Science Letters, Vol. 39, pp. 2199-2204.(W)
30. Choudhuri, A. R. and Gollahalli, S. R. *Stability of Hydrogen-Hydrocarbon Blended Fuel Diffusion Flames*, 2003, Journal of Propulsion and Power, Vol. 19, No. 2. pp. 220-225.(W)
31. Choudhuri, A. R. and Gollahalli, S. R. *Global Characteristics of Hydrogen-Hydrocarbon Composite Fuel Turbulent Jet Flames*, 2002, International Journal of Hydrogen Energy, Vol. 28, pp.445-454.(W)
32. Choudhuri, A. R., Luna, S. P., and Gollahalli, S. R., *Effects Of Elliptic Coflow On The Structure Of A Circular Gas Jet Flame*, 2002 AIAA Journal of Propulsion and Power, Vol. 18, No. 3, pp. 686-695. (W)
33. Choudhuri A. R. and Gollahalli, S.R. *Ambient Pressure Effects on the Flame Geometry and Structure of Gas Jet Flames in Cross-Flow*, 2001, AIAA Journal of Propulsion and Power, Vol. 17, No. 1, pp. 190-196.(W)
34. Choudhuri A. R. and Gollahalli, S.R. *Combustion Characteristics of Hydrogen-Hydrocarbon Hybrid Fuel*, 2000, International Journal of Hydrogen Energy, January, Vol. 25, pp. 451-462. (W)
35. Choudhuri A. R. and Gollahalli, S.R. *Effects of Ambient Pressure and Burner Scaling on Flame Geometry and Structure of Hydrogen Jet Flames in Cross-Flow* 2000, International Journal of Hydrogen Energy, September, Vol. 25, pp. 1107-1118.(W)
36. Choudhuri A. R. and Gollahalli, S.R. *Laser Induced Fluorescence Measurements of Radical Concentrations in Hydrogen-Hydrocarbon Blended Gas Fuel Flames*, 2000, International Journal of Hydrogen Energy, September, Vol. 25, pp. 1119-1127.(W)

Professional Magazine and Trade Journal Articles

1. Choudhuri, A. and Wicker, R., *Energy Engineering with Frontier Additive Manufacturing*, Aerospace America, December 2015, pp. 59. (X).
2. Dam, B., Islam, MD., Love, N., and Choudhuri, A., *Investigation on Flame Characteristics of Oxy-fuel Combustion*, 2012, Energy-Tech, July Issue.(X)
3. Robinson, A. and Choudhuri, A. R, *Propulsion Research Capacity at the Center for Space Exploration Technology Research*, 2011, DOD Chemical Propulsion Information Analysis Bulletin, (CPIAC Bulletin), Vol 3, No. 2, pp. 7-8. (X).
4. Choudhuri, A. R., *Terrestrial Energy Systems*, Aerospace America, December 2010, pp. 48. (X).

Conference Articles (Technical)

1. Esparza, A., Ferguson, R., Choudhuri, A., Love, N., and Shafirovich, E., *Thermoanalytical Studies on the Kinetics of Thermal and Catalytic Decomposition of Aqueous HAN*

- Solution*, 53rd AIAA/SAE/ASEE Joint Propulsion Conference 2017, AIAA-2017-4838. (Y) (ITAR Paper)
2. Vazquez, A., Love, N., and Choudhuri, A., *HTP CubeSat Propulsion Module*, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, 2016, AIAA 2016-4882. (Y) (ITAR Paper)
 3. Sanchez, L., Chaparro, J., Torres, S., Love, N., Choudhuri, A., *Development and Testing of a O₂/CH₄ Torch Igniter for Propulsion Systems*, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, 2016, AIAA 2016-4975. (Y)
 4. Acosta-Zamora, A., de la Torre, M., Love, N., Choudhuri, A., *Investigation on Flow-Flame Front Characteristics in a Backward Facing Step Combustor Using Laser Diagnostics*, 14th International Energy Conversion Engineering Conference, 2016, AIAA 2016-4635. (Y)
 5. Hernandez, M., Cabrera, L., Choudhuri, A., Love, N., *Conceptual Study of Oxy-Methane Flows in a Constant-Velocity Faraday Magnetohydrodynamic Generator*, 14th International Energy Conversion Engineering Conference, 2016, AIAA 2016-4634.(Y)
 6. Chowdhury, ASM. Badhan, A., Cabrera, L., Ahsan R. Choudhuri, Love, N., *Conceptual Design of a Supercritical Oxyfuel Combustor Based on LOX/Methane Rocket Engine Technologies*, 2016, AIAA 2016-4636.(Y)
 7. Hernandez, M., Cabrera, L., Vidana, M., Chaidez, N., Love, N., and Choudhuri, A., *Design of a Oxy-Methane Combustor for Direct Power Extraction*, 2016, 54th Aerospace Sciences Meeting, 2016, AIAA 2016-0243 (Y) [**Best Paper Award**]
 8. Vidana, O., Chaidez, M., Lovich, B., Lovich, J., Aboud, M., Hernandez, M., Cabrera, L., Love, N., and Choudhuri, A., *Component and System Modeling of A Direct Power Extraction System*, 2016, 54th Aerospace Sciences Meeting, 2016, AIAA 2016-0990. (Y)
 9. Chowdhury, A., Bugarin, L., Badhan, A., Love, N., and Choudhuri, A., *Analysis of Directly Heated Oxyfuel Supercritical Power Generation System*, 2016, 54th Aerospace Sciences Meeting, 2016, AIAA 2016-0991. (Y)
 10. Mohamed, D., Sanchez, L., Cabrera, L., Love, N., and Choudhuri, A., *Flow Characterization of High Velocity Oxy-Fuel Thermal Sprays*, 2014, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, 2014, DOI: 10.2514/6.2014-3417 (AIAA 2014-3417). (Y)
 11. Sanchez, L., Dorado, V., Ellis, R., Woodward, R., and Choudhuri, A., *An Experimental Study of the Effects of Plate Geometry on the Spray Atomization of LOX/CH₄ in Uni-Element Shear Coaxial Injectors*, 2014, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, 10.2514/6.2014-3788 (AIAA 2014-3788). (Y)
 12. Acosta-Zamora, A., Hossain, A., Quiroz Design, M., and Choudhuri, A., *Design of a High Turbulence Intensity Combustion System*, 2014, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, 10.2514/6.2014-3874 (AIAA 2014-3874). (Y)
 13. Sanchez, L., Dorado, V., Ellis, R., Woodward, R., and Choudhuri, A., *An Experimental Investigation of a LOX/CH₄ Torch Ignition System for Propulsion Research*, 2014, (50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, 10.2514/6.2014-3986 (AIAA 2014-3986). (Y)
 14. Trejo, A., Galvan, M., Trujillo, A., and Choudhuri A., , *Experimental Investigation of Liquid Methane Convection and Boiling in Rocket Engine Cooling Channels*, 2014, 50th

- AIAA/ASME/SAE/ASEE Joint Propulsion Conference, 10.2514/6.2014-4007 (AIAA 2014-4007). (Y)
15. Karim, H. and Choudhuri, A., *Development of Passive Wireless Temperature Sensors using Metamaterials*, 52nd Aerospace Sciences Meeting, 2014, 10.2514/6.2014-0855 (AIAA 2014-0855). (W)
 16. Mohamed, D., Cabrera, L., Love, N., and Choudhuri, A., *High Velocity Oxy Fuel Thermal Spray Gun Design*, 2014, 52nd Aerospace Sciences Meeting, 10.2514/6.2014-085 (AIAA 2014-0854). (W)
 17. Sarker, S., Hossain, S., Maldonado, S., Love, N. and Choudhuri, A., *Effect of Multi-Tube Fuel Injector Design on Flame Stability and NO_x Pollutant Emissions from Syngas Flames*, 2014, 52nd Aerospace Sciences Meeting, 10.2514/6.2014-1384 (AIAA 2014-1384). (Y)
 18. Chowdhury, ASMR, Sarker, R., Love, N., and Choudhuri, A., *Testing of a New Drag Relationship for Non-Spherical Particle Geometries Using the Two-Fluid Model*, 2014, **52nd Aerospace Sciences Meeting**, 2014, 10.2514/6.2014-1535 (AIAA 2014-1535). (Y)
 19. Acosta-Zamora, A. and Choudhuri, A., *Development of Propellant Feed, Thrust Measurement, and Automation Control Systems for Testing LOX/LCH₄ Reaction Control Thruster*, 2013, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, AIAA 2013-3839. (ITAR Restricted Paper) (Y)
 20. Flores, J., Sanchez, L., Dorado, V., *Experimental Studies of Uni-Element Shear Coaxial Injector for LOX/LCH₄ Propulsion Research*, 2013, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, AIAA 2013-3851. (Y)
 21. Garcia, C., Garcia, Z., and Choudhuri, A., *An Experimental Investigation of Micro-Channel Catalyst Bed for a Hydrogen Peroxide Micro-Propulsion System*, 2013, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, AIAA 2013-3978. (ITAR Restricted Paper). (Y)
 22. Trejo, A., Garcia, C., and Choudhuri, A., *An Experimental Investigation on the Steady State Heat Transfer Characteristics of Liquid Methane*, 2013, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, AIAA 2013-4415. (Y)
 23. Sarker, Md., Love, N., and Choudhuri, A., *Flow Field Visualization and Drag Analysis of Particles in a Gas-Solid Fluidized Bed*, 2013, 51th AIAA Aerospace Sciences Meeting and Exhibit, Grapevine, Texas, Paper No. AIAA-2013-0597. (Y)
 24. de la Torre., Love, N., and Choudhuri, A., *Effects of Diluents, Firing Input and Hydrogen Content on Premixed Oxy-Syngas Flames*, 2013, 11th International Energy Conversion Engineering Conference, 2013, AIAA 2013-4152. (W)
 25. Sarker, Md., Love, N., and Choudhuri, A., *Effect of Particle Density on the Hydrodynamic Behavior of a Gas-Solid Fluidized Bed*, 2013, 11th International Energy Conversion Engineering Conference, 2013, AIAA 2013-4092. (W)
 26. Dam, B., Ardha, V.R., de la Torre, M., Love, N., and Choudhuri, A., *Effect of CO₂ and H₂O Diluents on Radiative Heat Release Rates of Oxy-Fuel Flames*, 10th International Energy Conversion Engineering Conference, 2012, AIAA 2012-3718. (W)
 27. Flores, J., Pineda, F., Betancourt-Roque, J, Dorado, V., Choudhuri, A., *Cryogenic Propellant Delivery and Controls Facility Development for LOX/Methane Propulsion*

- Research*, 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, 2012, AIAA 2012-3850. (Y)
28. Navarro, C., Sanchez, L., Betancourt-Roque, J., and Choudhuri, A., *High Pressure Optically Accessible Rocket Combustor Testing and Evaluation*, 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, 2012, AIAA 2012-3856. (Y)
 29. Ardha, V. R., Dam, B, Norman, L., and Choudhuri, A., *Characterization of Oxy-Fuel Flames in a Swirl Based Combustor*, 10th International Energy Conversion Engineering Conference, 2012, AIAA 2012-3786. (W)
 30. Sarker, S., Nunez, J., Valdez, C., Love, N., and Choudhuri, A., *Design and Development of an Optically Accessible High Pressure Combustor*, 10th International Energy Conversion Engineering Conference, 2012, AIAA 2012-3784. (W)
 31. Trejo, A., Garcia, C., and Choudhuri, A., *An Experimental Investigation on the Heat Transfer Characteristics of Liquid Methane*, 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, 2012, AIAA 2012-4121. (Y)
 32. Robinson, A. and Choudhuri, A., *Institution and Community Wide Approach to Engineering Workforce Development*, 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit, 2012, AIAA 2012-3884. (Y)
 33. Corona, G., Dam, B., Love, N., and Choudhuri, A., *Large Eddy Simulation of Reacting Center body Stabilized Swirled Flow in a Gas Turbine Combustor*, 2012, 50th AIAA Aerospace Sciences Meeting and Exhibit, Nashville, Tennessee , Paper No. AIAA-2012-0209. (Y)
 34. Sarker, Md., Rahman, Md., Love, N., and Choudhuri, A., *Effect of Bed Height, Bed Diameter and Particle Shape on Minimum Fluidization in a Gas-Solid Fluidized Bed*, 2012, 50th AIAA Aerospace Sciences Meeting and Exhibit, Nashville, Tennessee , Paper No. AIAA-2012-0644. (Y)
 35. Ruvalcaba, M., Md., Rahman, Md., Love, N., and Choudhuri, A., *Numerical Modeling of Gas-Solid Fluidized Bed Dynamics with Spherical Particles*, 2012, 50th AIAA Aerospace Sciences Meeting and Exhibit, Nashville, Tennessee , Paper No. AIAA-2012-0643. (Y)
 36. Ahmed, M., Md., and Choudhuri, A., *Behavior of Methane Flame in Channel Type Meso-Combustor*, 2012, 50th AIAA Aerospace Sciences Meeting and Exhibit, Nashville, Tennessee , Paper No. AIAA-2012-0208. (Y)
 37. Pineda, F., Flores, J., Navarro, C., and Choudhuri, A., *Cryogenic System Development for LOX/Hydrocarbon Propulsion Research*, 2011, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, San Diego, California, Paper No. AIAA-2011-5671.(Y)
 38. Navarro, C., Betancourt-Roque, J., Flores, J., Sanchez, L., Robinson, N., and Choudhuri, A., *Development of a Multi-Purpose Optically Accessible Rocket Combustor for Liquid Oxygen and Hydrocarbons*, 2011, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, San Diego, California, Paper No. AIAA-2011-6017.(Y)
 39. Trejo, A., Garcia, C., Robinson, N., and Choudhuri, A., *Development of a Carbo-Thermal Rig to Study Cryogenic Heat Transfer Characteristics*, 2011, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, San Diego, California, Paper No. AIAA-2011-6018.(Y)

40. Flores, J., Ingle, M., Robinson, N., and Choudhuri, A., *Development of a Torsional Thrust Balance for the Performance Evaluation of 100mN-5N class thrusters*, 2011, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, San Diego, California, Paper No. AIAA-2011-6016.(Y)
41. Valenzuela, J., Garcia, C., Garcia, Z., and Choudhuri, A., *HTP Decomposition in Millimeter Scale Channel Type Catalytic Reactors*, 2011, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, San Diego, California, Paper No. AIAA-2011-5922.(Y)
42. Ardha, V., Dam, B., Love, N., and Choudhuri, A., *Effect of Local Flow Field Fluctuations on Characteristics of Turbulent Flames*, 2011, 9th International Energy Conversion Engineering Conference, San Diego, California, AIAA 2011-5595.(W)
43. Ruvalcaba, M., Rahman, M., Love, N., and Choudhuri, A., *Analysis of Drag on Non-Spherical Particles in Fluidized Beds*, 9th International Energy Conversion Engineering Conference, San Diego, California, AIAA 2011-5746. (W)
44. Dam, B., Islam, Md., Love, N., and Choudhuri, A., *Determination of Radiative Heat Release Rates of Oxy-fuel Flames*, 2011, 9th International Energy Conversion Engineering Conference, San Diego, California, AIAA 2011-5594. (W)
45. Noor-a-Alam, M., Ramana, C., and Choudhuri, A., *Analysis of Microstructure and Thermal Stability of Hafnia-Zirconia Based Thermal Barrier Coatings*, 2011, 9th International Energy Conversion Engineering Conference, San Diego, California, AIAA 2011-6009. (W)
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48. Dam, B., Corona, G., Hayder, M., and Choudhuri, A., *Investigation of Flame Flashback in a Swirl Stabilized Burner*, 2011, 49th Aerospace Sciences Meeting, Orlando, FL, AIAA 2011-0620. (Y).
49. Rahman, M., Ruvalcaba, M., Love, N., and Choudhuri, A., *Investigation of Gas-Solid Fluidized Bed Dynamics with Spherical and Non-Spherical Particles*, 2011, 49th Aerospace Sciences Meeting, Orlando, FL, AIAA 2011-0131. (Y).
50. Dam, B., Corona, G., and Choudhuri, A., *Flashback Propensity in Swirl Stabilized Burner with Syngas Fuels*, 2010, ASME Power 2010 Conference, Chicago, IL, POWER2010-27237. (W)
51. Dam, B., Ardha, V., and Choudhuri, A., *Laminar Flame Velocity of Syngas Fuels*, 2010, ASME Power 2010 Conference, Chicago, IL, POWER2010-27294. (W)
52. Dam, B., Corona, G., and Choudhuri, A., *Flashback Propensity in Swirl Stabilized Burner with Syngas Fuels*, 2010, ASME Power 2010 Conference, Chicago, IL, POWER2010-27237. (W)
53. Dam, B., Corona, G., and Choudhuri, A., *Investigation of Flashback Propensity in Turbines with Syngas Fuels*, 2010, 48th Aerospace Sciences Meeting, Orlando, FL, AIAA

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54. Dam, B. and Choudhuri, A., *Flashback Propensity of Syngas Fuels*, 2009, ASME Power 2009 Conference, Albuquerque, NM, POWER2009-8101. (W)
 55. Choudhuri, A., Shirsat, V., and Lianos, D. *Non-Toxic Propellant Based Lightweight Divert and Attitude Control Systems for Future Kill Vehicles*, 2009, Missile Defense Agency Advanced Technology Conference. (W) (ITAR Restricted Publication).
 56. Ahmed, M., Shirsat V., Choudhuri, A., Gupta, A., *An Investigation on the Dynamics of Mesocombustors*, 2008, 46th AIAA Aerospace Sciences Meeting and Exhibit, Reno, Nevada, Paper No. AIAA-2008-1139. (Y)
 57. Subramanya, M. and Choudhuri, A., *Investigation of Combustion Instability Effects on the Flame Characteristics of Fuel Blends*, 2007, 5th International Energy Conversion Engineering Conference, AIAA 2007-4796.
 58. Reddy, P. and Choudhuri, A., *Flame Extinction Limits of H₂-CO Fuel Blends*, 5th International Energy Conversion Engineering Conference, 2007, AIAA 2007-4793.
 59. Love, N., Gollahalli, S., and Choudhuri, A., *Laminar Burning Velocity of Synthetic Gas in Near Extinction Conditions*, 4th International Energy Conversion Engineering Conference, 2006, AIAA 2006-4122.
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 61. Subramanya, M. and Choudhuri, A., *Investigation on the Flame Extinction Limit of Fuel Blends*, 41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Tucson, Arizona, Paper No. AIAA-2005-3586.(Y)
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 66. Valadez, J. and Choudhuri, A., *An Investigation on Ignition in a Microcombustion Chamber*, 2004, 2nd International Energy Conversion Engineering Conference, Providence, Rhode Island. Paper No. AIAA-2004-5525. (W)
 67. Subramanya, M. and Choudhuri, A., *Operating Point Control of Combustion Processes Using Dynamic Flame Tracking*, 2004, International Energy Conversion Engineering Conference, Providence, Rhode Island. Paper No. AIAA-2004-5523 . (W)

68. Vargas A. and Choudhuri, A., *Near-Field Characteristics of Elliptic Coaxial Jets*, 2nd, International Energy Conversion Engineering Conference, Providence, Rhode Island. Paper No. AIAA-2004-5526. (W)
69. Ahmed, A., Anchondo, I., and Choudhuri, A., *Mixing Dynamics of a Channel Type Microcombustor*, 40th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, Fort Lauderdale, Florida, Paper No. AIAA-2004-3711.(Y)
70. Camacho, J. and Choudhuri, A., *Characteristics of Nonbuoyant of Elliptic Jet Diffusion Flames*, 2004, 42nd AIAA Aerospace Sciences Meetings and Exhibits, Reno, Nevada. Paper No. AIAA-2004-0814. **[Best Paper Award]** (W)
71. Subramanya, M., Natarajan, S., and Choudhuri, A., *Infrared Image Processing For Operating Point Control of Gas Turbine Combustors*, 2004, ASME Power Conference, Baltimore, Maryland, March 30-April 2, Paper No. ASME PWR 2004-52034. (W)
72. Anchondo, I. and Choudhuri, A., *An Investigation on The Mixing and Flame Behavior Of Microcombustors*, 39th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, AIAA-2003-4635. (Y)
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74. Choudhuri, A and Subramanya, M., *Infrared Thermographic Image Processing For Operating Point Control*, 1st International Energy Conversion Engineering Conference (IECEC), Aug 17-21, Portsmouth, Virginia, 2003, AIAA-2003-5945. (W)
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77. Vargas A. and Choudhuri, A., *Characteristics of Elliptic Co-Axial Jet*, 2003, Electric Power Conference and Expo, March 4-6, Houston, Paper No. EP03-II. (X)
78. Udera, B., Delory, G., Landis, G., Duvet, L., Choudhuri, A., Pina, M., Bedard, D., and Furano, G., *Wobble: A Proposed Mission to Characterize Past and Present Water on Mars*, 2002, 53rd International Astronautical Congress, The World Space Congress, Houston, Texas, Paper No. AIAA IAF-02-Q.3.2.03. (Y)
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82. Choudhuri A. R., Luna, S. P., and Gollahalli, S.R *Aspect Ratio Effects Of Elliptic Co-Flow On Turbulent Jet Flame Structures*, ASME Engineering Technology Conference on Engineering (ETCE) 2002, Houston, Texas, Proceedings of ETCE 2002, Paper No. ETCE 2002/CAE 29008. (W)
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 84. Choudhuri A. R. and Gollahalli, S.R *Global Characteristics of Hydrogen-Hydrocarbon Composite Fuel Turbulent Jet Flames*, 2001, 36th Intersociety Energy Conversion Engineering Conference (IECEC 2001), Savannah. Georgia, Paper No. IECEC 2001-ES-2001-AT-75.(W)
 85. Choudhuri A. R. Baird, B. and Gollahalli, S.R. *Micronozzle Flow Characteristics*, 2001, 39th AIAA Aerospace Sciences Meetings and Exhibits, Reno, Nevada. Paper No. TE-7, AIAA-2001-0132.(Y)
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 90. Choudhuri A. R. Baird, B., Gollahalli, S.R. and Schneider, S. J. *Study of 2-D Flow Through Microrocket Nozzles*, 2000, 12th Annual Symposium on Propulsion, Propulsion Engineering Research Center, Ohio Aerospace Institute, Cleveland, Ohio.(W)
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97. Choudhuri A. R. and Gollahalli, S.R. *Laser Induced Fluorescence Measurements of Radical Concentrations in Hybrid Fuel*, 1997, Proceedings, ASME International Joint Power Generation Conference, Colorado, Vol.1, pp.489-496. (W)
98. Choudhuri A. R. and Gollahalli, S.R. *Structure of Laminar Jet Diffusion Flames of Fuel Gas Mixture*, 1997, Proceedings, ASME International Joint Power Generation Conference, Colorado, Vol.1, pp.309-318. (W)
99. Choudhuri, A. R. and Hossain, K. A., *Importance of Renewable Energy For Sustainable Development*, 1998, National Seminar on Utilization of Renewable and Alternative Energy Sources For Sustainable Development (NSURAESD'98), Khulna, Bangladesh, Vol.1, pp. 8-12. (X)
100. Choudhuri, A. R., and Kazim, K. A., *Feasibility Analysis of Conceptual Wind-Hydrogen Hybrid Energy System for the Coastal Region of Bangladesh*, 1998, National Seminar on Utilization of Renewable and Alternative Energy Sources For Sustainable Development (NSURAESD'98), Khulna, Bangladesh, Vol.1, pp. 127-132. (X)
101. Choudhuri, A. R. and Moral, N. A., *Hybrid Fuel for Supersonic Combustion Ram Jet*, Proceedings, 1997, 4th Annual Paper Meet, Mechanical Engineering Division, Institute of Engineers, Bangladesh, Vol. 1, pp. 262-265. (X)
102. Choudhuri, A. R., and Moral, N. A., *Scope of Wind-Hydrogen Alternative in Coastal Region of Bangladesh*, 1997, Proceedings, National Seminar on Renewable Energy for Poverty Alleviation (NSREPA-97), IEB Dhaka Center, Dhaka, Bangladesh, Vol. 1, pp. 207-212. (X)
103. Choudhuri, A. R., *Characteristics of Body Force Instabilities of Hydrogen-Oxygen Premixed Flames*, 1995, 2nd Annual Paper Meet, Mechanical Engineering Division, Institute of Engineers, Bangladesh, Vol. 1, pp. 230-232. (X)
104. Choudhuri, A. R., *Design of Gas Turbine Combustor using Hydrogen as Fuel*, 1994, 1st Annual Paper Meet, Mechanical Engineering Division, Institute of Engineers, Bangladesh, Vol. 1, pp. 97-105. (X)

Conference Articles (Education)

1. Keerthi, H., Uptergrove, P., Everett, M., Love, D., and Choudhuri, A., *K-12 Minority STEM Education Program: MAA Southwest*, 2016, 52nd AIAA/ASME/SAE/ASEE Joint

Propulsion Conference and Exhibit, Salt Lake City, Utah, Paper No. AIAA-2016-4723. (Y)
[Best Paper Award]

2. Robinson, N. and Choudhuri, A. *Bridging Industry Best Practices in Project Management and Safety Assurance to Academic Propulsion Research*, 2011, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and Exhibit, San Diego, California, Paper No. AIAA-2011-6066. (Y)
3. Schoephoerster, R., Wicker, R., Pineda, R., and Choudhuri, A. *Integrating Professional Practice into the Engineering Curriculum: A Proposed Model and Prototype Case with an Industry Partner*, 2011, 2011 ASEE Annual Conference & Exposition, Vancouver, BC., pp. 22.913.1 - 22.913.15. (Y)

Invited Talks & Presentations

1. *Invited Speaker, NASA MIRO PI Meeting*, 2017 NASA MUREP Principal Investigator Meeting, May 23, 2017, NASA Goddard Space Flight Research Center, Baltimore, Maryland.
2. *Invited Speaker, 3rd Annual NASA Historically Black Colleges and Universities (HBCU) and Minority Serving Institution (MSI) Partnerships Meeting*, Feb 22, 2017 Huntsville, AL.
3. *Panel Speaker*, 2016 NASA Mission STEM Summit, NASA Headquarter, Washington, D.C
4. *Invited Speaker, MIRO Group 4 and 5: Best Practices and Lesson Learned*, 2015 NASA MUREP Principal Investigator Meeting, Sep 10-11, 2015, NASA Headquarter, Washington, D.C
5. *Keynote Speaker, Destination Mars: Frontiers in Expanding Human Presence in the Solar System*, International Conference on Mechanical, Industrial, and Energy Engineering, Dec 26-27, 2014, Khulna, Bangladesh.
6. *Panel Speaker*, Minorities in Energy Initiative Kick-off Meeting, Department of Energy Headquarters, Sep 24, 2013, Washington, D.C.
7. *Panel Speaker, The Road Ahead for Academia*, 2011 NASA Education Stakeholder's Summit, Nov 29-Dec 2, Chantilly, VA.
8. *Invited Speaker, Bridging Industry Best Practices in Project Management and Safety Assurance to Academic Propulsion Research*, 2011 NASA IT Summit, August 15-17, San Francisco, CA.
9. *Keynote Speaker, Energy Security in a Carbon Constrained World: Building an Energy R&D Workforce for 21st Century Demographics*, US Department of Energy University Coal Research (UCR) & HBCU/OMI Contractors Review Conference June 7-8, 2011, Pittsburgh, PA.
10. *Keynote Speaker, Revolutionary and Evolutionary Energy Technologies for a Low Carbon Future*, International Conference on Mechanical, Industrial, and Energy Engineering, December 23-24, 2010, Khulna, Bangladesh.
11. *Invited Speaker, Effects of Combustion-Induced Vortex Breakdown on Flashback Limits of Syngas-Fueled Gas Turbine Combustors*, 2010 University Turbine Systems Research Workshop, The US Department of Energy, October 19-21, 2010, State College, PA.

12. *Panel Moderator, Low Carbon Energy Conversion Engineering University Alliance*, 46th Joint Propulsion Conference/8th International Energy Conversion Engineering Conversion, July 25-28, 2010, Nashville, TN
13. *Panel Leader, Transfer and Application of Energy*, Renewable Energy Rodeo and Symposium, Team Bliss, US Army Redcom, and Tardec, June 8-9, 2010, Fort Bliss, Texas.
14. *Invited Speaker, University of Texas El Paso: Energy R&D Initiatives*, UT System Renewable Energy Research Conference, May 19-20, 2010, Dallas, TX.
15. *Panel Speaker Energy Sustainability in a Carbon Constrained World*, , Building Partnership and Pathways to Address Engineering Grand Challenges Conference, National Science Foundation and University of Texas El Paso, Feb 8-10, 2010, El Paso, Texas.

Recent Media Interviews and Media Appearances

1. *Is El Paso the next aerospace hub?*, El Paso Inc.
http://www.elpasoinc.com/news/local_news/article_82403702-8f14-11e6-8734-87626a119b04.html
2. *NASA MissionSTEM Summit*, NASA TV/NASA Streaming
<https://www.youtube.com/watch?v=W4E9fGUzawA&index=3&list=PLPkyDbA559J8Mqd0ptSVu71t97kxvXm8G>
3. *NASA Higher Education Summit*, NASA TV/NASA Streaming
http://www.youtube.com/watch?feature=player_embedded&v=cCxINTmzmGg
4. *Gas Line Infrastructure*, KFOX Channel 14
5. *Commercial Space Program*, knowledge@wharton
6. *Fuel Efficiency*, ABC KTSM Channel 9.
7. *Space Shuttle Columbia Accident*, KFOX Channel 14.
8. *Cell Phone Safety at Gas Stations*, ABC KTSM Channel 9
9. *Microgravity Combustion Experiments*, ABC KTSM Channel 9

Department of Defense Technical Reports (ITAR Restricted: not approved for public release)

1. Choudhuri, A. and Gupta, A., Development of Novel Microcombustor/Microreactor for mN- μN Range Chemical MicroThrusters; Agency Technical Report, Missile Defense Agency: HQ0147-09-C-0009, September, 2013. (T)
2. Manciu, F., Bronson, A., and Choudhuri, A., Al₄H₆/AlH₃ Mixture for a High Energetic Solid Rocket Fuel; Agency Technical Report, Missile Defense Agency: HQ0006-08-C-0040, December, 2010. (T)
3. Choudhuri, A. R. and Gupta, A., Novel Coaxial Microinjector with Application to Liquid Micropropulsion System, Agency Technical Report, Missile Defense Agency; HQ0006-05-C-0022, January, 2010. (T)
4. Choudhuri, A. R. Non-Toxic Liquid Bipropellant Micropropulsion Technologies, Agency Technical Report, Missile Defense Agency ;HQ0006-07-C-0015, January, 2009. (T)

5. Choudhuri, A. R. Miniature Turbopump Technology Development for Divert Propulsion Systems, Agency Technical Report, Missile Defense Agency, HQ0006-05-C-0031, January, 2008. (T)
6. Choudhuri, A. R. Microcombustion Technology Development for the Divert Propulsion System of Miniature Kill Vehicles (MKVs), Agency Technical Report, Missile Defense Agency, DASG60-03-C-00900, January, 2006. (T)
7. Choudhuri, A. R., Advanced Mini-DACS for MKVs, Agency Technical Report, Space and Missile Defense Command, , RA-4-0011, October 2004.(T)

Department of Energy Technical Reports

1. Choudhuri, A., Investigation on Flame Characteristics and Burner Operability Issues of Oxy-Fuel Combustion; Final Technical Report, Department of Energy Grant DE-FE-0002402, September 2013.(T)
2. Choudhuri, A. and Love, N., Investigation of Gas Solid Fluidized Bed Dynamics with Non-Spherical Particles; Final Technical Report; Department of Energy Grant DE-FE0003742, September 2013. (T)
3. Choudhuri, A. and Love, N., Effects of Combustion Induced Vortex Breakdown on Flashback Limits of Syngas Fueled Turbine Combustors; Final Technical Report, Department of Energy Grant DE-FG26-08NT0001719, July 2011. (T)
4. Camacho, J., Subramanya. M., and Choudhuri, A. Flame Synthesis of Carbon Nanotubes using Low Calorific Value Fuels, Final Technical Report, Department of Energy Grant DE-FG26-06NT42749, June, 2007 (T)
5. Choudhuri, A. R., Investigation of H₂ Concentration and Combustion Instability Effects on the Kinetics of Strained Syngas Flame, Final Technical Report, Department of Energy Grant DE-FG26-05NT42495, October, 2006 (T).
6. Choudhuri, A. R., Investigation of the Effects of Composition and Combustion Instabilities on the Flashback Propensity of Syngas Premixed Flames, Final Technical Report, Department of Energy Grant DE-FG26-03NT41917, February, 2005. (T)
7. Choudhuri, A. R., Investigation of the Flame Extinction Limit of Fuel Blends, Final Technical Report, Department of Energy Grant DE-FG26-04NT42133, August, 2005. (T)
8. Choudhuri, A., Passive Control of Particle Dispersion in a Particle-laden Circular Jet using Elliptic Co-annular Flow, 2003, Technical Report on Department of Energy Grant DE-FG26-01NT41363, National Energy Technology Laboratory, Department of Energy, June 2003.(T)

NASA Technical Reports

9. Valadez, J., Claudia, H., Pizana, C., Trejo, S., Francois, V., and Choudhuri, A., Titan Exploration Aerial Surveyor: A Conceptual Vehicle Design for the Exploration of Titan, May 2003, submitted to NASA Ames Research Center. *Reviewed by a NASA expert panel.* (W)

10. Udera, B., Delory, G., Landis, G., Duvet, L., Choudhuri, A., Pina, M., Bedard, D., and Furano, G., Water Observations from a Balloon Borne Lightweight Explorer (WOBBLE): A Scout-class mission concept to study past and present evidence for water on Mars, A report published with NASA Jet Propulsion Laboratory Design Team X as a part of the Planetary Science Summer School, August, 2001.(W)

SPONSORED RESEARCH

Externally Funded Research and Education Grants [Total: 26,622,928]

1. The University of Texas El Paso and The County of El Paso Technology Research and Innovation Acceleration Park (tRIAC), Principal Investigator with Co-Principal Investigator Ryan Wicker, Economic Development Administration, Amount Funded \$1,000,000, (the total award includes \$500,000 the County of El Paso and Institutional Cost Commitments)
2. Oxy-Combustion in Turbine, Co-Principal Investigator with Principal Investigator Norman Love, American Air Liquide Inc., Amount Funded \$110,000, Dec 16-Aug 17.
3. Technology Demonstration of a High Pressure Swirl Oxy-Coal Combustor, Principal Investigator with Co-Principal Investigator Norman Love, Department of Energy, Amount Funded \$1,501,559, (the total award includes \$401,559 American Air Liquide Inc. and Institutional Cost Commitments), Oct 16-Sep 19.
4. MAA Southwest, Principal Investigator with Co-Principal Investigator Norman Love NASA, Amount Awarded: \$375,000, Sep 15-Sep 18.
5. Metal 3D Printing of Low-NOX Fuel Injectors with Integrated Temperature Sensors, Principal Investigator with Co-Principal Investigator Ryan Wicker, Department of Energy, Amount Funded \$250,000, Sep 15-Aug 17.
6. MIRO cSETR: NASA MIRO Center for Exploration Technology Research, Principal Investigator and Center Director, with Co-Investigators Norman Love, Jack Chessa, Evgeny Shafirovich, and Ryan Wicker, NASA, Amount Funded \$9,350,000 (the total award includes \$4,350,000 Lockheed Martin and Institutional Cost Commitments), Aug 15-Sep 20.
7. HAN Based Advanced Hybrid Rocket Motor Technologies, Co-Principal Investigator with Principal Investigator Norman Love and Co-Principal Investigator Evgeny Shafirovich, Missile Defense Agency, Amount Awarded \$600,000, April 2015-March 2018.
8. Development of Courses on Nuclear Engineering Materials at UTEP, Principal Investigator with Co-Principal Investigator Yirong Lin, C.V. Ramana and Louis Everett, US Nuclear Regulatory Commission, Amount Awarded: \$188,684, September 2014-September 2016.
9. High Temperature and High Velocity Direct Power Extraction Using an Open-Cycle Oxy-Combustion System, Co-Principal Investigator with Principal Investigator Norman Love. Department of Energy, Amount Awarded: \$500,000, October 2014 - September 2015,

10. Aerospace Course Development through Project Based Learning, Texas Space Grant Consortium, Principal Investigator (proposal developed by cSETR Staff Member Nathaniel Robinson), University of Texas at Austin, Amount Awarded: \$10,000.
11. Rapid Manufacturing of Smart Parts with Embedded Piezoceramic Sensors for High Efficiency Energy System, Co- Principal Investigator with Principal Investigator Yirong Lin and Co- Principal Investigator Ryan Wicker. Amount awarded \$1,150,894 (the total award includes \$237, 532 matching fund from UTEP)). Sep 13-Sep 16
12. An Investigation on Structures of Premixed Flames in High Intensity Turbulent Flow, Principal Investigator,, Department of Defense, Amount Awarded \$650,000 (the total award includes a \$70,000 subcontract to Princeton University), August 2013-July 2016
13. Development of 20N Class ADN Thrusters for Fast-Response Time DAC Propulsion Systems, Principal Investigator, Collaborative Proposal with the University of Maryland at College Park (Ashwani Gupta), Missile Defense Agency, Department of Defense, Total Amount Awarded, \$700,000 (UTEP Share: \$348,999), Sep 2013-August 2016.
14. Development of “Lick and Stick’ Wireless Temperature Sensor, Principal Investigator with Co-Principal Investigator Yirong Lin and Ryan Wicker, Department of Energy, Amount Funded \$200,000, February 13-January 14.
15. Low Carbon Energy Engineering Doctoral GAANN Fellowship, Principal Investigator with Co-Principal Investigator Dr. Norman Love (other participants Evgeny Shafirovich, C.V. Ramana, and Vinod Kumar), Department of Education, Amount Funded \$399,798, August 12-August 15
16. Design Optimization of Liquid Fueled High Velocity Oxy-Fuel Thermal Spraying Technique for Durable Coatings for Fossil Power Systems, Principal Investigator with Co-Principal Investigator C.V. Ramana, Department of Energy, Amount Funded \$200,000, October 2012-September 2015
17. Establishment of a SEMAA to Serve the Southwest, Principal Investigator, (proposal developed by cSETR Staff Member Nathaniel Robinson), NASA, Amount Awarded: \$506,250, February 2011-June 2015.
18. Investigation of Gas-Solid Fluidized Bed Dynamics with Non-Spherical Particles, Principal Investigator with Co-Principal Investigator Norman Love, Department of Energy, Amount Funded \$200,000, July 2010-June 2013.
19. cSETR: Center for Exploration Technology Research, Principal Investigator and Center Director, with Co-Investigators Louis Everett, Cesar Carrasco, Jose Hurtado, Jack Chessa, and David Borrok, NASA, June 2009, Amount Funded \$4,999,618, Oct 09-Sep 14.
20. Investigation on Flame Characteristics and Burner Operability Issues of Oxy-Fuel Flames, Principal Investigator, Department of Energy, Amount Funded, \$300,000, Dec 09- Nov 12.
21. Programmatic and Capacity Development for an Energy Engineering Doctoral Program at UTEP, Principal Investigator with Co-Principal Investigator Louis Everett, Department of Education, Amount Funded \$299,709, Oct 09-Sep 11.
22. Hafnia-Based Nanostructured Thermal Barrier Coatings for Advanced Hydrogen Turbine Technology, Co-Principal Investigator with Principal Investigator C. V. Ramana, Agency: Department of Energy, Amount Funded: \$389,883, Oct 09- Oct 12.

23. Development of Novel Microcombustor/Microreactor for mN- μ N Range Chemical MicroThrusters, Principal Investigator with Co-Principal Investigator Arturo Bronson, Collaborative Proposal with the University of Maryland at College Park (Ashwani Gupta), Missile Defense Agency, Department of Defense, Amount Funded, \$599,787 (UTEP Share \$257,001), Jun 09- May 12.
24. Effects of Combustion Induced Vortex Breakdown on Flashback Limits of Syngas Fueled Turbine Combustors; Principal Investigator, Agency: Department of Energy; Amount Requested: \$198,802, Apr 2008-Mar 2011.
25. Investigation on Non-Toxic Liquid Bipropellant Micropropulsion Technologies; Principal Investigator, Agency: Missile Defense Agency; Amount Funded: \$298,890, Aug 2007-Aug 2009.
26. Investigation of Al_4H_6/AlH_3 Mixture for a High Energetic Solid Rocket Fuel; Co-Principal Investigator with Principal Investigator Felicia Manciu and Co-PI Arturo Bronson Agency: Missile Defense Agency; Amount Funded: \$299,910, Jan 2008-Jan 2010.
27. Miniature Turbo-pump Technology Development for Divert Propulsion Systems, Principal Investigator, Missile Defense Agency, Department of Defense, Amount Funded \$299,992, Dec 05- Dec 07.
28. Investigation on a Novel Coaxial Microinjector with Application to Liquid Micropropulsion System, Principal Investigator with Co-Principal Investigator Jack Chessa, Collaborative Proposal with the University of Maryland at College Park (Ashwani Gupta), Missile Defense Agency, Department of Defense, Amount Funded \$599,999 (UTEP Share \$195,000), Oct 05- Sep. 08.
29. Flame Synthesis of Carbon Nanotubes using Low Calorific Value Fuels; Principal Investigator with Co-Principal Investigator Jack Chessa, Agency: DOE, Amount: \$20,000, December 2005-December 2006.
30. Investigation of H_2 Concentration and Combustion Instability Effects on the Kinetics of Strained Syngas Flames, Principal Investigator, Agency: Department of Energy, Amount Funded \$20,000, Aug. 05-July 06.
31. Microcombustion Technology Development for the Divert Propulsion System of Miniature Kill Vehicles (MKVs), Principal Investigator, Agency: Missile Defense Agency, Department of Defense, Amount Funded: \$254,155, January 04-January 06.
32. Advanced Mini-DACS (Divert and Attitude Control Systems) for Miniature Kill Vehicels (MKVs), Principal Investigator, Agency: US Space and Missile Defense Command/Radiance Technologies Inc. SBIR Phase I, Department of Defense, Amount Funded \$90,000 (UTEP Share \$27,000), July 04-Dec. 04.
33. Investigation of the Effects of Composition and Combustion Instabilities on the Flashback Propensity of Syngas Premixed Flames, Principal Investigator, Agency: Department of Energy, Amount Funded: \$19,999. Jun 04-May 05.
34. Investigation on the Flame Extinction Limit of Fuel Blends, Principal Investigator, Agency: Department of Energy, Amount Funded: \$19,999, Sep 03-Aug 04.
35. Passive Control of Particle Dispersion in a Particle-laden Circular Jet using Elliptic Co-annular Flow; Principal Investigator with Co-Principal Investigator Ryan Wicker; Agency: Department of Energy, Amount Funded: \$20,000, Sep 01-Aug 02.

Capital Funding [Total: \$ 2,135,000]

1. Southwest Emerging Technology Symposium, Lockheed Martin Corporation, Amount Funded \$10,000, 2016.
2. Lockheed Martin Mechanical Engineering Laboratory, Lockheed Martin Corporation, Amount Funded \$700,000 2015-2020.
3. Lockheed Martin Mechanical Engineering Laboratory, Lockheed Martin Corporation, Amount Funded \$840,000 (includes \$60,000 TARP matching from Texas Higher Education Coordinating Board and \$180,000 in kind matching). 2010-2014
4. NASA Aerospace Education Laboratory, Amount Funded \$200,000 (equipment), 2010-2013.
5. Alum Mike Loya Fund for Energy Research Infrastructure, Amount Given: \$250,000. 2012. (Primary Contact: Dean Richard T. Schoephoerster)
6. Shell Energy Security and Climate Change Speaker Series, Shell, Amount Funded \$118,000. 2010-2015.
7. Shell Energy Book Program, Shell, Amount Funded \$19,000. 2010-2011

Other Grants & Funding [Total: \$106,500]

1. Quantitative Measurements of Nonbuoyant Elliptic Laminar Jet Diffusion Flames; Faculty Mentor and Sponsor, Undergraduate Student Project; Agency: NASA Reduced Gravity Student Flight Opportunity Program/Texas Space Grant Consortium, Amount Funded: \$7500, 2002, 2003 and 2004.
2. Titan Exploration Aerial Vehicle Design; Faculty Mentor and Sponsor, Undergraduate Design Team, NASA Marshall Space Flight Center, Amount Funded: \$1000, 2003.
3. Development of Aerospace Research in UTEP; Principal Investigator, Boeing Community Funding Project, Amount Funded: \$8000, 2003.
4. NASA Harriet Jenkins Pre-Doctoral Fellowship for Abel Vargas and Jorge Camacho; Principal Investigator, Agency: NASA, Amount ~ 90,000, 2002-2004.

Internally Funded Competitive Research Grants [Total: \$282,906]

1. High Speed Laser Diagnostic Instrumentation for Clean Fuel Research, Institutional Research Funding, Principal Investigator, Amount Funded: \$240,000, February 2009.
2. Multi-Scale Modeling of Nanoparticle Formation in Tobacco Smoke, Principal Investigator, with Co-Principal Investigator Jack Chessa, UTEP Tobacco Settlement Research Fund, Amount Funded: \$24,206, May 04-August 04.
3. Investigation on the System Integration Issues of Microspacecrafts, Principal Investigator with Co-Principal Investigator Jack Chessa, UTEP ORSP MEMS Initiative, Amount Funded: 16,000, May 04-August 04.
4. Combustion Characteristics of Microjet Diffusion Flames, Principal Investigator, URI, Amount Funded: \$2,700, Sep 01-August 02.

Patent(s)

1. US Provisional Patent Application No: 62/344354, Entitled "Swirl Torch Igniter," by Ahsan Choudhuri, Norman Love, Luis Sanchez, and Charles Hill, Filed June 06, 2016.
2. US Patent No: 13/194,529, Entitled "Axial Flow Pumps and Related Methods," by Ahsan Choudhuri, Filed July 29, 2011.

INSTRUCTIONAL AND CURRICULAR ACCOMPLISHMENTS

Undergraduate Courses:

1. Heat Transfer
2. Fluid Mechanics
3. Mechanical Engineering Laboratory II
4. Mechanical Engineering Laboratory III
5. Spacecraft Propulsion (New Course Developed)
6. Space Vehicle Design (New Course Developed)
7. Energy Systems Engineering (New Course Developed)
8. Thermal Systems Design (New Course Developed)

Graduate Courses:

1. Advanced Heat Transfer
2. Advanced Fluid Mechanics
3. Advanced Thermodynamics
4. Computational Fluid Dynamics (New Course Developed)
5. Combustion (New Course Developed)
6. Advanced Combustion (New Course Developed)
7. Advanced Engineering Analysis (New Course Developed)
8. Turbulence (New Course Developed)
9. Micro and Nanotechnology (New Course Developed)

Student Teaching Evaluation (Overall Rating of the Instructor/ Scale 5.0)

Calendar Year	Spring		Fall	
Year 1(2001)	4.3	4	4.5	3.4
Year 2(2002)	4.9	*	4.8	4.9
Year 3(2003)	4.7	*	4.7	4.9
Year 4(2004)	4.6	4.8	4.8	4.8
Year 5(2005)	4.8	4.8	4.9	4.1
Year 6 (2006)	*	*	4.7	4.8
Year 7 (2007)	4.7	4.2	4.5	4.6

Year 8 (2008)	*	*	4.5	*
Year 9 (2009)	4.5	4.2	4.3	4.8/4.7/4.9/4.7/4.69
Year 10 (2010)	4.5/4.3/4.0/4.8	*	*	*
Year 11 (2011)	*	*	*	*
Year 12 (2012)	4.7	*	4.8	*
Year 13 (2013)	4.6	*	3.7	*
Year 14 (2014)	4.3	*	4.3	*
Year 15 (2015)	*	*	4.8	*

*Buy-Out or Reduced Teaching Load

Curriculum Development

1. 2010 Mechanical Engineering BS Curriculum
2. 2017 Mechanical Engineering BS Curriculum
3. 2010 Mechanical Engineering MS Curriculum
4. 2010 Energy Science and Engineering PhD Track Curriculum
5. 2016 Mechanical Engineering PhD Curriculum

MENTORING AND STUDENT SUPERVISION

Research Assistant Professors

1. Dr. Angel Flores-Abad, Research Assistant Professor, January 2016-
2. Dr. Arifur Khan, Research Assistant Professor, April 2016-
3. Dr. Ishraq Shabib, Research/Clinical Assistant Professor, August 2011-August 2013
Currently Assistant Professor, Central Michigan University.
4. Dr. Norman Love, Research Assistant Professor, Dec 2009-May 2012.
Currently Associate Professor, University of Texas at El Paso.
5. Dr. M. Hayder, Research Assistant Professor, January 2010-August 2011.
Currently Assistant Professor, Savannah State University.
6. Dr. Mujibur Khan, Research Assistant Professor, January 2011-July 2012
Currently Assistant Professor, Georgia Southern University.
7. Dr. Mohammad Noor Alam, Research/Clinical Assistant Professor, January 2013-December 2013
Currently Clinical Assistant Professor, Washington State University, Tri-Cities.

Completed PhD Dissertation

1. Luisa Cabrera, Mechanical Engineering, Summer 2017
Dissertation Title: Investigation on a Cooling Channel Design for High Heat Flux Oxy-Fuel Direct Power Extraction Combustor
Currently at Intel
(Co-Chair)

2. Luis Sanchez, Mechanical Engineering, Fall 2016
Dissertation Title: Development and Testing of O₂/CH₄ Torch Igniter Technologies for Propulsion Systems
Currently at Blue Origin
3. Arturo Acosta-Zamora, Mechanical Engineering, Fall 2016
Dissertation Title: A Study of High Intensity Turbulence Reacting Flow Structures Flame Front Structures Characterization of Highly Turbulent Reacting Flow Over a Backward Facing Step
Currently at DOD NAVAIR
4. Martin de La Torre, Mechanical Engineering, Fall 2016
Dissertation Title: Flow Characterization of High Intensity Turbulent Flows Through Time Resolved Particle Image Velocimetry in A Backward Facing Step Combustor
Currently at Corning
5. Manuel Hernandez, PhD Mechanical Engineering, Fall 2016
Dissertation Title: Design and Experimental Investigation of an Oxy-Fuel Combustion System for Magnetohydrodynamic Power Extraction
(Co-Chair)
Currently R&D Engineering at General Electric
6. Diaaeldin Mohamed, Energy Science and Engineering Track, Summer 2015
Dissertation Title: Optimization and Characterization of High Velocity Oxy-Fuel Sprayed Coatings.
Currently at Valmont Newmark
7. Adrian Trejo, Energy Science and Engineering Track, Spring 2014
Dissertation Title An Experimental Investigation of the Cooling Channel Geometry Effects on the Internal Forced Convection of Liquid Methane
Currently at Missile Defense Agency
8. Chance P. Garcia, Energy Science and Engineering Track, Spring 2013
Dissertation Title: Pressure and Heat Flux Effects on the Heat Transfer Characteristics of Liquid Methane
Currently at NASA MSFC
9. Jesus R. Flores, Energy Science and Engineering Track, Spring 2013
Dissertation Title: Development and Testing of an Ignition Physics Test Facility and An Oxygen/Methane Swirl Torch Igniter
Currently at Blue Origin
10. Christopher M. Bradley, Energy Science and Engineering Track, Spring 2013
Dissertation Title: Thermal Barrier Coatings (TBC's) For High Heat Flux Thrust Chambers
Currently: at Herrera Stafford & Associates
11. Mohammad Noor Alam, Energy Science and Engineering Track, Fall 2012
Dissertation Title: Hafnia Based Nanostructured Thermal Barrier Coatings for Next Generation Gas Turbine (Co-Chair)
Currently at Washington State University, Tri-Cities
12. Vishwanath Ardha, Energy Science and Engineering track, Spring 2012

- Dissertation Title: Measurement and Analysis of Turbulent Syngas/Air and Methane Oxy-Combustion
Currently at GE Energy
13. Bidhan Dam, Energy Science and Engineering track, Spring 2012
Dissertation Title: Study of Flame Stability and Radiation Characteristics of Oxy-Fuel Combustion for Advanced Combustor
Currently at Woodward FST
 14. Mario Ruvalcaba, Energy Science and Engineering track, Spring 2012
Dissertation Title: Investigation of Gas-Solid Fluidized Bed with Non-Spherical Particles
Currently at Federal Mogul
 15. Mahbub Ahmed, Materials Science and Engineering, Fall 2007
Dissertation Title: Investigation on Microcombustion Processes
Currently at Southern Arkansas University
 16. Mahesh Subramanya, Materials Science and Engineering, Spring 2007
Dissertation Title: Extinction Characteristics of Blended Fuel Flames
Currently at Wood Group Mustang, Inc
 17. Hector Olvera, Environmental Science and Engineering, Spring 2006
Dissertation Title: Multiscale Modeling of Hydrogen Dispersion in a Highly Urbanized Area (Co-Chair)
Currently at the University of Texas El Paso
 18. Jorge Camacho. PhD Materials Science and Engineering. Fall 2005
Dissertation Title: Flame Synthesis of Carbon Nanotubes
Currently at the University of Wisconsin-Platteville

Completed MS Thesis

1. Jonathan Candelaria, Mechanical Engineering, Summer 2017
Thesis Title: Theoretical Acoustic Absorber Design Approach for LOX/LCH₄ Pintle Injector Rocket Engines
Currently at Southwest Research Institute
2. Jonathan Valenzuela, Mechanical Engineering, Summer 2017
Thesis Title: Regression Rate of HTPB and a HAN-Based Propellant
Currently PhD Student at the University of Texas at El Paso
3. Israel Lopez, Mechanical Engineering, Spring 2017
Thesis Title: Design of a 2000 lbf LOX/LCH₄ Throttleable Rocket Engine for a Vertical Lander
4. Kimberly Hogge, Mechanical Engineering, Spring 2017
Thesis Title: Quantifying the Characteristic Length of a Combustor for an Ionic Liquid Monopropellant Thruster
Currently at Lockheed Martin
5. Jaclyn Mona Mejia, Mechanical Engineering, Spring 2017
Thesis Title: Design and Development of a Delivery System for Green Ionic Monopropellants and Testing of a 22N Thruster
Currently PhD Student at the University of Texas at El Paso

6. Raul Ponce, Mechanical Engineering, Spring 2017
Thesis Title: Development and Integration of the Janus Robotic Lander: A Liquid Oxygen-Liquid Methane Propulsion System Testbed
Currently at Lockheed Martin
7. Jesus Trillo, MS in Mechanical Engineering, Fall 2016
Thesis Title: Design of a Liquid Oxygen and Liquid Methane Rocket Engine for Suborbital Flight
Currently at NASA KSC
8. Aaron Johnson, MS in Mechanical Engineering, Fall 2016
Thesis Title: Design and Performance Evaluations of a LO2/Methane Reaction Control Engine
Currently at Blue Origin
9. Mariana Chaidez, MS in Mechanical Engineering, Fall 2016
Thesis Title: Structural Design of Liquid Oxygen/Liquid Methane Robotic Lander Janus (Co-Chair)
Currently PhD Student at the University of Texas at El Paso
10. Ana Rios, MS in Mechanical Engineering, Summer 2016
Thesis Title: Microstructural Characterization of High Velocity Oxy-Fuel Coatings of Inconel 718 and Iron Aluminides
Currently PhD Student at the University of Texas at El Paso.
11. Alejandro Vazquez, MS in Mechanical Engineering, Fall 2015
Thesis Title: Design and Development of A Hydrogen Peroxide Monopropellant Thruster System
Currently PhD Student at the University of Texas at El Paso.
12. Juan Barragan, MS in Mechanical Engineering, Fall 2015
Thesis Title: Ionic Liquid Monopropellant Integrated Thruster Development TestBed
Currently NASA JSC
13. Gabriel R. Trujillo, MS in Mechanical Engineering, Summer 2015
Thesis Title: Design and Testing of a LO2/CH4 Swirl Torch Ignition System
Currently at Blue Origin
14. Marco Quiroz, MS in Mechanical Engineering, Summer 2015
Thesis Title: Fluid Flow Characterization of High Turbulent Intensity Compressible Flow Using Particle Image Velocimetry
Currently PhD Student at the University of Texas at El Pass
15. Mohammad Arif Hossain, MS in Mechanical Engineering, Summer 2015
Thesis Title: Design of a High Intensity Turbulent Combustion System
Currently at Ohio State University
16. Linda Yoon, MS in Mechanical Engineering, Fall 2014
Thesis Title: Design Optimization of the Heat Transfer Model for a High Heat Flux Test Facility
Currently at NASA GRC
17. Robert Ellis, MS in Mechanical Engineering, Fall 2014
Thesis Title: Evaluation of a torch ignition system for LOX/Methane Rocket Engines

- Currently at Lockheed Martin Space Systems
18. Manuel Galvan, MS in Mechanical Engineering, Fall 2014
Thesis Title: *An Experimental Investigation on Liquid Methane Heat Transfer Enhancement through the use of Longitudinal Fins in Cooling Channels*
Currently at NASA GRC
 19. Luisa A. Cabrera, MS in Mechanical Engineering, Summer 2014
Thesis Title: *Design and Development of a High Velocity Oxy-Fuel Thermal Spray Gun.*
Currently PhD Student at the University of Texas at El Paso.
 20. Vanessa Dorado, MS in Mechanical Engineering, Spring 2014 2014
Thesis Title: *Experimental Spray Atomization Studies of Uni-Element Shear Coaxial Injector for LO_x/Methane Combustion*
Currently at the Missile Defense Agency.
 21. Abraham Trujillo, MS in Mechanical Engineering, Spring 2014.
Thesis Title: *An experimental investigation of liquid methane convection and boiling in rocket engine cooling channels*
Currently at Blue Origin
 22. Jose L. Mena, MS in Mechanical Engineering, Spring 2014
Thesis Title: *Performance Evaluation of a LO_x/CH₄ Reaction Control System Thruster.*
Currently at DOD NAVAIR.
 23. Marjorie A. Ingle, MS in Mechanical Engineering, Summer 2013
Thesis Title: *Characterizing Cryogenic Propellant Flow Behavior Through a Cavitating Venturi.*
Currently at DOD NAVAIR
 24. Martin A. De la Torre, MS in Mechanical Engineering, Fall 2013
Thesis Title: *Investigation of Radiative Heat Release Factor of Premixed Oxy-Syngas Flames.*
Currently Corning
 25. Arturo Acosta, MS in Mechanical Engineering, Fall 2012
Thesis Title: *An Experimental Investigation on LOX/Methane Reaction Control Systems.*
Currently DOD NAVAIR
 26. Zenia Garcia, MS in Mechanical Engineering, Fall 2012
Thesis Title: *An Experimental Investigation of HTP Micro-Channel Cat-Bed for Micro-propulsion Systems.*
Currently at NASA MSFC
 27. Juan Valenzuela, MS in Mechanical Engineering, Spring 2012
Thesis Title: *HTP Decomposition of Millimeter Scale Channel Type Catalytic Reactors*
Currently at NASA MSFC
 28. Luis E. Sanchez, MS in Mechanical Engineering, Spring 2012
Thesis Title: *Combustion Characteristics of a Shear Coaxial Torch Ignition System*
Currently at Blue Origin
 29. Francisco Pineda, MS in Mechanical Engineering, Spring 2012
Thesis Title: *Cryogenic System Development for LOX/Hydrocarbon Propulsion Research*
Currently at the Missile Defense Agency
 30. Christopher Navarro, MS in Mechanical Engineering, Spring 2012

- Thesis Title: Development of a High Pressure Optically Accessible Combustor and Shear Co Axial Injector
Currently at Blue Origin
31. Jesus Betancourt-Roque, MS in Mechanical Engineering, Spring 2012
Thesis Title: Instrumentation, Control, and Torch Ignition Systems Development for LOX/Methane Propulsion Research
Currently at Blue Origin
32. Gilberto Corona, MS in Mechanical Engineering, Fall 2011
Thesis Title: Experimental and Numerical Investigation of the Effect of Fuel Composition on Flame Stability on a Gas Turbine Combustor
Currently at Alstom Power
33. Md Islam, MS in Mechanical Engineering, Fall 2011
Thesis Title: An Investigation on Flame Characteristics of Oxy-Fuel Combustion
Currently at Boeing
34. Sergio Flores, MS in Civil Engineering, Fall 2011
Thesis Title: Development of a Heat Transfer Test Rig for Finding Heat Transfer Characteristics of Liquid Methane
Currently at an Engineering Project Development Firm
35. Chandan Roy, MS in Mechanical Engineering, Summer 2011 (Co-Chair)
Thesis Title: Synthesis, Microstructure and Thermal Analysis of Gd₂O₃ – HfO₂ Coatings
Currently a Post-Doctoral Fellow at Auburn University
36. Md Rahman, MS in Mechanical Engineering, Spring 2011
Thesis Title: An Experimental Study on the Effect of Particle Geometry On Drag and Flow Behaviors in a Packed Fluidized Bed.
Currently a Post-Doctoral Fellow at MIT
37. Carlos Gomez, MS in Mechanical Engineering, Summer 2010
Thesis Title: An Investigation on Pulsing Performance of mN Class Bipropellant Thruster
Currently at NASA MSFC
38. Chance Garcia, MS in Mechanical Engineering, Summer 2010
Thesis Title: Development of a Micro Cat-Bed for Miniature Thruster
Currently at NASA MSFC
39. Sudipa Sarkar, MS in Mechanical Engineering, Spring 2010
Thesis Title: Combustion Characteristics of AlH₃ Flame
Currently at Woodward
40. Jesus Flores, MS in Mechanical Engineering, Fall 2009
Thesis Title: An Investigation of the Performance of mN Class Bipropellant Thrusters
Currently at Blue Origin
41. Gerardo Vargas, MS in Mechanical Engineering, Fall 2009
Thesis Title: An Experimental Study of the Hydrodynamics of Multiphase Flow In Fluidized Beds
Currently at Honda Research and Development
42. Mario Ruvalcaba, MS in Mechanical Engineering, Fall 2009
Thesis Title: Modeling and Validation of Circulating Fluidized Bed Hydrodynamics

- Currently at Federal Mogul
43. Bidhan Dam, MS in Mechanical Engineering, Fall 2009
Thesis Title: *Flashback Propensity of Gas Mixtures*
Currently at Woodward FST
 44. Vishwanah Ardha, MS in Mechanical Engineering, Fall 2009
Thesis Title: *An Investigation on Syngas Burning Velocities*
Currently at GE Energy
 45. Jonathon Bice, MS in Mechanical Engineering, Summer 2009
Thesis Title: *Development of a Miniature Axial Flow Pump for 4N Class Liquid Bipropellant Thrusters.*
Currently at the Department of Defense.
 46. Vivek Shirsat, MS in Mechanical Engineering, Summer 2008
Thesis Title: *Thrust Chamber Dynamics of Miniature Thrusters*
Currently a PhD student at the University of Maryland at College Park
 47. Karla Perez, MS in Mechanical Engineering, Spring 2008
Thesis Title: *Flow Structure and Characteristic Performance Of Cold Gas Microthrusters*
Currently at Lockheed Martin Space Systems
 48. Gabriel Payan, MS in Mechanical Engineering, Spring 2008
Thesis Title: *An Investigation on Ignition in Microcombustion Chambers*
Currently at Raytheon Missile Systems
 49. Carlos Ramirez, MS in Mechanical Engineering, Fall 2007
Thesis Title: *Meso-Machining of Miniature Space System Components*
Currently at Raytheon Missile Systems
 50. Marcela Cobian, MS in Mechanical Engineering, Fall 2007
Thesis Title: *Investigation on the Flow Dynamics of Mesoscale Inlet Guide Vanes*
Currently at the U.S. Patent Office
 51. Timothy Phillips, MS in Mechanical Engineering, Spring 2007
Thesis Title: *An Investigation of A Miniature Hybrid Swirl/Jet Injector*
Currently at the Department of Defense.
 52. Sharmin Nawsher, MS in Electrical and Computer Engineering, Fall 2006
Project Title: *QCM based Soil Moisture Sensor*
Currently at Cargill Software Engineering
 53. Juan Licon, MS in Mechanical Engineering, Fall 2005,
Thesis Title: *System Level Design of a Novel Miniaturized Bipropellant Delta-V Engine*
Currently at Raytheon Space and Airborne Systems
 54. James Valadez, MS in Mechanical Engineering, Fall 2005
Thesis Title: *Experimental Investigation on Microscale Coaxial Swirl Injectors: Hot-Fire Testing*
Currently at the Department of Defense.
 55. Deepthi Davu, MS in Mechanical Engineering, Fall 2005
Thesis Title: *Investigation on the Flashback Propensity of Fuel Blends: Combustion Instability Effects*
Currently at the Hamworthy Combustion

56. Praveen Reddy, MS in Mechanical Engineering, Fall 2005
Thesis Title: Fuel Variability Effects on a Swirl Stabilized Burner
Currently at the Hamworthy Combustion
57. Norman Love, MS in Mechanical Engineering, Summer 2005
Thesis Title: An Experimental Investigation On Microscale Coaxial Swirl Injectors: Cold Flow Testing
Currently at the University of Texas at El Paso.
58. Rogelio Franco, MS in Mechanical Engineering, Spring 2005
Thesis Title: Investigation on the Flashback Propensity of Fuel Blends: Composition Effects
Currently at NASA KSC
59. Young Yun, MS in Mechanical Engineering, Fall 2004
Thesis Title: Investigation on A Novel Coaxial Microrocket Injector
Currently at DOD
60. Ivan Anchondo, MS in Mechanical Engineering, Fall 2003
Thesis Title: Mixing Dynamics of Channel Type Microcombustors
Currently at NASA JSC
61. Fernando Jasso, MS in Mechanical Engineering, Fall 2003
Thesis Title: Characteristics of Asymmetric Coaxial Jets
Currently at El Paso Fluid Systems Inc.
62. Srikanth Notargan, MS in Electrical and Electronics Engineering, Fall 2003
Thesis Title: Development of an Active Flame Tracking Algorithm for Gas Turbine Operating Point Control, Fall 2003.
Currently at unknown
63. Mahesh Subramanya, MS in Mechanical Engineering, Summer 2003
Thesis Title: Infrared Thermographic Image Processing for Flame Equivalence Ratio Measurements
Currently at Wood Group Mustang, Inc
64. Jorge Camacho, MS in Mechanical Engineering, Fall 2002
Thesis Title: Theoretical Analysis and Experimental Measurements of Nonbuoyant Elliptic Laminar Jet Flames
Currently at the University of Wisconsin-Platteville
65. Abel Vargas, MS in Mechanical Engineering, Summer 2002
Thesis Title: A Numerical Investigation on Elliptic Coaxial Jets
Received his doctoral degree from George Washington University. Currently at Naval Surface Warfare Center.
66. David Candelas, MS in Mechanical Engineering, Summer 2002
Thesis Title: Characteristics of Flow-field Inside a Production Computer Chassis
Currently at Dallas ISD.

SERVICE

UTEP Committees/Services

Chair, Mechanical Engineering Faculty Search Committee, 2007-2008, 2008-2009, 2009-2010
Lead, Energy Science and Engineering PhD Track Development, 2008-
Member, College Faculty Council Task Force, 2007-2008
Chair, Mechanical Engineering Undergraduate Laboratory Development, 2007-
Chair, Mechanical Engineering Curriculum Review and Redesign Committee, 2007-2008
Member, College of Engineering Curriculum Review Committee, 2007-2008
Co-Strategic Lead: College of Engineering Infrastructure and Sustainability Research, 2010-
Strategic Lead, College of Engineering Energy Research Development, 2007-
Strategic Lead, Mechanical Engineering Department Research Program Development, 2006-
ABET Leadership Team, Mechanical Engineering and College of Engineering, 2006-
Institutional Representative, Texas Space Grant Consortium, 2004-
Member, Museum Committee, 2004-2005
Chair, Mechanical Engineering Graduate Program Redesign, 2004
Member, Mechanical Engineering, PhD proposal committee, 2003-2004
ABET Leadership Team, Mechanical Engineering, 2001
Graduate Advisor, Mechanical Engineering Program, 2001

Membership in Professional Societies

Associate Fellow, American Institute of Aeronautics and Astronautics (AIAA)
Vice-Chair, Terrestrial Energy Technical Committee, American Institute of Aeronautics and
Astronautics (AIAA)
Member, American Society of Mechanical Engineers
Member, American Society of Engineering Education

Reviewer

Reviewer, Journal of Fuel
Reviewer, Applied Energy
Reviewer, Journal of Porous Media
Reviewer, Fullerenes, Nanotubes and Carbon Nanostructures
Reviewer, Journal of Heat Transfer
Reviewer, Journal of Propulsion and Power
Reviewer, Journal of Engineering of Gas Turbine and Power
Reviewer, Journal of Solar Engineering
Reviewer, Combustion Science and Technology
Reviewer, International Journal of Hydrogen Energy
Proposal Reviewer, Department of Energy
Proposal Reviewer and Review Panelist, National Science Foundation

Conference Organization

- Technical Area Chair*, Terrestrial Energy Systems, 59th Aerospace Sciences Meeting and Exhibits, American Institute of Aeronautics and Astronautics, 2017.
- Session Chair*, 14th International Energy Conversion Engineering Conference/52nd Joint Propulsion Conference, American Institute of Aeronautics and Astronautics, 2016.
- Topical Area Organizer*, Terrestrial Energy Systems, 11th International Energy Conversion Engineering Conference/Joint Propulsion Conference, American Institute of Aeronautics and Astronautics, 2013.
- Technical Area Chair*, Terrestrial Energy Systems, 51st Aerospace Sciences Meeting and Exhibits, American Institute of Aeronautics and Astronautics, 2013.
- Topical Area Organizer*, Terrestrial Energy Systems, 10th International Energy Conversion Engineering Conference/Joint Propulsion Conference, American Institute of Aeronautics and Astronautics, 2012.
- Conference Chair*, 2nd Southwest Energy Science and Engineering Symposium, El Paso, Texas, 2011.
- Topical Area Organizer*, Fuels, Combustion and Terrestrial Energy Systems, 9th International Energy Conversion Engineering Conference/Joint Propulsion Conference, American Institute of Aeronautics and Astronautics, 2011.
- Session Chair*, 49th Aerospace Sciences Meeting and Exhibits, American Institute of Aeronautics and Astronautics, 2011.
- Conference Chair*, 1st Southwest Energy Science and Engineering Symposium, El Paso, Texas, 2011.
- Panel Chair*, Low Carbon Energy Conversion Engineering University Alliance, 46th Joint Propulsion Conference, American Institute of Aeronautics and Astronautics, 2010.
- Panel Leader*, Transfer and Application of Energy, Renewable Energy Rodeo and Symposium, Team Bliss, US Army Redcom, and Tardec, June 8-9, 2010, Fort Bliss, Texas.
- Panel Organizer*, Energy Sustainability in a Carbon Constrained World, Building Partnership and Pathways to Address Engineering Grand Challenges Conference, National Science Foundation and University of Texas El Paso, Feb 8-10, 2010, El Paso, Texas.
- Session Chair*, Energy Efficiency, 48th Aerospace Sciences Meeting and Exhibits, American Institute of Aeronautics and Astronautics, 2010.
- Topic Area Coordinator*, Fuel and Renewable Energy, 5th International Energy Conversion Engineering Conference, American Institute of Aeronautics and Astronautics, 2007.
- Topical Area Co-Organizer*, Fuel and Combustion Technology Division, International Mechanical Engineering Congress, American Society of Mechanical Engineers, 2005.
- Session Chair*, Fuel and Combustion Technology Division, International Mechanical Engineering Congress, American Society of Mechanical Engineers, 2005.
- Technical Area Chair*, Terrestrial Energy Track, 43rd Aerospace Sciences Meeting and Exhibits, American Institute of Aeronautics and Astronautics, 2005.

Topical Area Co-Chair, Fuel and Combustion Technology Division, International Mechanical Engineering Congress, American Society of Mechanical Engineers, 2004.

Session Chair, 1st International Energy Conversion Engineering Conference, American Institute of Aeronautics and Astronautics, 2003.

Session Co-Chair, 2003 Design Engineering Technical Conference, American Society of Mechanical Engineers, 2003.